Application Serial No.: 10/601,881 Docket No.: N.C. 84,353
Applicant(s): Long et al.

Amendments to the Claims

This listing of claims will replace all prior versions and listings of claims in the application.

Listing of Claims:

Claim 1 (currently amended) An electrode for use in energy storage comprising:

(a) a nanostructured electrically conductive metal oxide interpenetrated by a continuous mesoporous network; and

(b) an ultrathin, conformal polymer coating on the metal oxide;

wherein said electrode has a mesoporous structure and said metal oxide retains said mesoporous network.

Claim 2 (original) The electrode of claim 1 wherein said metal oxide is selected from the group consisting of manganese oxides, vanadium oxides, nickel oxides, iron oxides, and physical or compositional mixtures thereof.

Claim 3 (previously presented) The electrode of claim 1 wherein said polymer coating is based on an aryl monomer that can be electrochemically oxidized under self-limiting conditions.

Claim 4 (original) The electrode of claim 1 wherein said polymer coating is selected from the group consisting of *o*-phenylenediamine, aniline, and mixtures thereof.

Claim 5 (currently amended) The electrode of claim 1 wherein said metal oxide ~~inherently~~ has a porous architecture and wherein said polymer coating is deposited electrochemically in a self-limiting fashion on said metal oxide such that said metal oxide architecture retains said ~~inherent~~ porosity.

Claim 6 (original) The electrode of claim 1 wherein said polymer coating is less than 10-nm thick.

Claim 7 (currently amended) A method for making an electrode for use in energy storage, comprising the steps of:

(a) preparing a nanostructured electrically conductive metal oxide interpenetrated by a continuous mesoporous network; and

(b) depositing a polymer coating on the metal oxide film;

wherein said electrode has a mesoporous structure and said metal oxide retains said mesoporous network.

Claim 8 (original) The method of claim 7 wherein said metal oxide is selected from the group consisting of manganese oxides, vanadium oxides, nickel oxides, iron oxides, and physical or compositional mixtures thereof.

Claim 9 (original) The method of claim 7 wherein said polymer coating is based on an arylamine monomer.

Claim 10 (original) The method of claim 7 wherein said polymer coating is selected from the group consisting of *o*-phenylenediamine, aniline, and mixtures thereof.

Claim 11 (currently amended) The method of claim 7 wherein said metal oxide ~~inherently~~ has a porous architecture and wherein said polymer coating is deposited electrochemically in a self-limiting fashion on said metal oxide such that said metal oxide architecture retains said ~~inherent~~ porosity.

Claim 12 (original) The method of claim 7 wherein said polymer coating is less than 10-nm thick.